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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,088	09/26/2003	Stephen J. Whitney	112690-978	7059
29176	7590	04/06/2005	EXAMINER	
BELL, BOYD & LLOYD LLC P. O. BOX 1135 CHICAGO, IL 60690-1135			NGUYEN, DANNY	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/672,088	Applicant(s) WHITNEY, STEPHEN J.	
	Examiner Danny Nguyen	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 10, 11, 29, 30, 36, 39, 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Greuter et al (USPN. 5,313,184). Greuter discloses a circuit protection device (figures 1-3) comprising an over-current protection portion having a surface (such as the over-current portion 5 has the surface shown in figure 2); an over-voltage protection (e.g. 4) disposed on the surface and thermally coupled to the over-current protection portion; and a plurality of terminations (1,2) connected the over-current and over-voltage protection portions to an electrical circuit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3, 20, 26-28, 31, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greuter in view of McGuire et. al. (USPN. 6,023,403).

Regarding claims 3, 31, 45, Greuter discloses all limitations of claim 1 as discussed above, but Greuter does not disclose the over current protection element as claimed. McGuire discloses over-current protection (figure 6) comprises a first substrate (top120); a second substrate (bottom120), each substrate having an electrode (100, 110) disposed thereon, and a PTC element (20) positioned between the first and second substrate and connected electrically to the electrodes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the circuit of Greuter to incorporate the over current protection element having above-limitations as taught by McGuire in order to reduce the current flow and cool down temperature to its normal operating (cols 1-2, lines 46-3).

Regarding claims 20, 26-28, Greuter discloses a voltage suppressor (e.g. 4) disposed on the surface and thermally coupled to the over-current protection element (2); and a plurality of terminations (1,2) connected the over-current element and the voltage suppressor. Greuter does not disclose the over current protection element as claimed. McGuire discloses an over-current protection (e.g. figure 6) comprises a first substrate (top120) and an electrode (100); a second substrate (bottom120), an electrode (110), a PTC element (20) positioned between the first and second substrate

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and connected electrically to the electrodes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the circuit of Greuter to incorporate the over current protection element having above-limitations as taught by McGuire in order to reduce the current flow and cool down temperature to its normal operating (cols 1-2, lines 46-3).

4. Claims 13-15, 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greuter in view of Yatsuo. Greuter discloses all limitations of claim 1 as discussed above, but Greuter does not disclose the over voltage protection portion as claimed. Yatsuo discloses an over voltage protection circuit (fig. 13) comprises an over-voltage portion (506) comprises a die having first and second side, each having an electrical contact, wherein one of the first and second side is electrically connected to the contact via a bond wire (507). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the overvoltage portion of Greuter to incorporate the over-voltage portion including die as taught by Yatsuo in order to improve protection (col. 11, lines 48-58).

5. Claims 4-7, 12, 16, 21-23, 32-35, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greuter in view of McGuire, and Yatsuo et al (USPN 6,353,236). Greuter discloses all limitations of claim 1 as discussed above, but Greuter does not disclose the over current protection element as claimed. McGuire discloses over-current protection having a first substrate (top120); a second substrate

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(bottom120), each substrate having an electrode (100, 110) disposed thereon, and a PTC element (20) positioned between the first and second substrate and connected electrically to the electrodes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the circuit of Greuter to incorporate the over current protection element having above-limitations as taught by McGuire in order to reduce the current flow and cool down temperature to its normal operating (cols 1-2, lines 46-3). However, the combination of Greuter and McGuire do not disclose at least one via and bonding the over-voltage portion to the over-current portion as claimed. Yatsuo discloses that one via (510) and bonding (507) the over-voltage portion (506) to the over-current portion (508) (figure 13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the circuit of Greuter and McGuire with the heat sink and bonding the over-voltage portion to the over-current portion as taught by Yatsuo in order to conducting heat away in power surge condition.

6. Claims 17-19, 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greuter in view of McGuire, and Hetherton et al (USPN 6,854,176). Greuter and McGuire disclose all limitations of claims 1, 16, and 29 as discussed above, but do not disclose the terminals as claimed. Hetherton discloses an over-current protection structure (figures 5-10) comprises terminals (51) includes a via extending through the substrate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the terminals of Greuter and McGuire to incorporate the

terminals with the via as disclosed by Hetherton in order to provide proper alignment with the terminals (col. 18, lines 11-17).

7. Claims 8, 9, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greuter in view of Montano (USPN 4,947,426). Greuter discloses all limitations of claims 1 and 29, but Greuter does not disclose the over-voltage protection portion includes a zener diode or thyristors as claimed. Montano discloses a protection circuit comprises a surge voltage, which includes a zeners or thyristors (col. 2, lines 18-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the overvoltage protection of Greuter to incorporate the zener or thyristor as disclosed by Montano in order to provide fast switching capability and small leakage current.

8. Claims 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greuter in view of McGuire, and Montano (USPN 4,947,426). Greuter and McGuire disclose all limitations of claim 20, but do not disclose the over-voltage protection portion includes a zener diode or thyristors as claimed. Montano discloses a protection circuit comprises a surge voltage, which includes a zeners or thyristors (col. 2, lines 18-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the overvoltage protection of Greuter and McGuire to incorporate the zener or thyristor as disclosed by Montano in order to provide fast switching capability and small leakage current.

Conclusion


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/30/2005



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